

No.

7900051



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pickseed West, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (PLANT VARIETY PROTECTION ACT, 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PERENNIAL RYEGRASS

'Dasher'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 11th day of March in the year of our Lord one thousand nine hundred and eighty-two.

Attest:

Kenneth B. ...
Acting
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY PICKSEED R-33		1b. VARIETY NAME DASHER		FOR OFFICIAL USE ONLY PV NUMBER 7900051	
2. KIND NAME PERENNIAL RYEGRASS		3. GENUS AND SPECIES NAME Lolium perenne L.		FILING DATE 2-28-79	TIME 3:30 P.M.
4. FAMILY NAME (BOTANICAL) GRAMINEAE		5. DATE OF DETERMINATION SEPTEMBER 1, 1976		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 2-28-79 1/19/82
6. NAME OF APPLICANT(S) PICKSEED WEST, INC.		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) BOX 888 TANGENT, OREGON 97389		8. TELEPHONE AREA CODE AND NUMBER (503) 926-8886	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) CORPORATION		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Oregon		11. DATE OF INCORPORATION Jan. 12, 1970	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: 1. Mr. W. Kent Wiley, Pickseed West, Inc., Box 888, Tangent, Oregon 07389 2. Mr. Mike Robinson, Pickseed West, Inc., Box 888, Tangent, Oregon 07389					
13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:					
<input checked="" type="checkbox"/> 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)					
<input checked="" type="checkbox"/> 13B. Exhibit B, Novelty Statement.					
<input checked="" type="checkbox"/> 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)					
<input type="checkbox"/> 13D. Exhibit D, Additional Description of the Variety.					
14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED			
15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)					
15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)					

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☒ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

February 23, 1979
(DATE)

February 23, 1979
(DATE)

(SIGNATURE OF APPLICANT)

(SIGNATURE OF APPLICANT)

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT A

Origin and Breeding History of Dasher Perennial Ryegrass

1. Dasher perennial ryegrass is an advanced generation synthetic cultivar derived from the progenies of 20 clones obtained from three separate breeding composites developed at the New Jersey Agricultural Experiment Station.

The parental germplasm of Breeding Composite L was derived from advanced generation crosses involving plants selected from Pennfine, Diplomat, Omega, clone X (selected from Patterson Park in Baltimore, Maryland) and clone L4H (selected from a school playground in Baltimore, Maryland). Over 20,000 seedlings selected from these crosses were screened for resistance to crown rust (Puccinia coronata Corda var. lolii Brown) and 2720 of the more resistant plants were transferred to a spaced-plant evaluation nursery. One hundred and seventy-two clones were subsequently selected from this nursery and transplanted to an isolated polycross nursery. Fourteen of the parental clones of Dasher were subsequently selected from this polycross on the basis of the performance of their progenies in turf trials. These clones were designated L-16, L-21, L-41, L-81, L-82, L-89, L-97, L-102, L-106, L-114, L-123, L-127, L-158 and L-172.

Breeding composite P was developed by screening over 3,000 seedlings of Pennfine for resistance to crown rust. Fifty-four of the most resistant plants were evaluated in polycross progeny trials conducted under turf maintenance. Two of the parental clones of Dasher were subsequently selected from this polycross. These clones were designated P-230 and P-237.

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Breeding Composite B was developed by conducting two cycles of phenotypic recurrent selection for crown rust resistance in Omega. Approximately 1000 seedlings were screened in each cycle. Fifty-four attractive clones were selected from the 387 most resistant seedlings. Clones B-316, B-320, B-397 and B-399 were subsequently selected as parents of Dasher as the result of their performance in polycross progeny trials conducted under turf maintenance.

The parental clones of Dasher were initially selected on the basis of attractive appearance, early anthesis date and freedom from disease in spaced-plant nurseries. Polycross progenies of these clones were subsequently evaluated in turf trials maintained at two fertility levels and mowed frequently at a 2 cm cutting height. Turf trials were observed for resistance to the winter brown blight disease incited by Helminthosporium siccans Drechsler and the large brown patch disease caused by Rhizoctonia solani Kuhn as well as rated for turf quality at frequent intervals. The parental clones of Dasher were selected from the best performing progenies possessing a bright, medium green color. In contrast, the parental clones of Fiesta were chosen from the best performing progenies possessing a bright, moderately dark green color.

2. Syn II breeder seed was produced from an isolated spaced-plant nursery of 875 clonal propagules selected from the 20 most promising progenies. Breeder seed must be used for the production of foundation seed. Certified seed production fields must be established from breeder or foundation seed.

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3. No ~~objectionable~~ off-type mature plants or variants have been observed in the multiplication of Dasher perennial ryegrass.

4. Syn II breeder seed and Syn III foundation seed have produced turf of comparable quality and acceptable uniformity (Table 20).

Novelty Statement on Dasher Perennial Ryegrass

'Dasher' perennial ryegrass is a medium green, fine-textured, turf-type variety. It is a medium early maturing ryegrass (table 4) with anthesis occurring 8 days later than 'Regal', 7 days later than 'Citation', 7 days later than 'Pennfine', 5 days later than 'Birdie' and 6 days later than 'Derby'. Anthesis of 'Dasher' occurred 8 days earlier than 'Caravelle', 12 days earlier than 'Blazer', 12 days earlier than 'Yorktown II', 17 days earlier than 'Manhattan' and 19 days earlier than 'Loretta'.

This variety has shown very good performance in turf trials in New Jersey and Oregon (tables 1, 2, 3 and 19). It has the ability to produce a fine textured, dense turf. In New Jersey tests (table 11), 'Dasher' produced significantly more tillers per unit area than 'Pennfine' (112), 'Derby' (113), 'Manhattan' (122), 'Player' (140), 'Regal' (143), 'Caravelle' (175), 'NK-100' (179), 'Ensporta' (208), 'NK-200' (217), 'S-101' (222), 'Sprinter' (228), 'Venlona' (251), 'S-321' (253), or 'Linn' (280). It also produced significantly narrower leaves than 'Derby' (1.84 mm versus 2.01 mm), 'Player' (1.84 mm versus 2.04 mm), 'Caravelle' (1.84 mm versus 2.17 mm), 'NK-100' (1.84 mm versus 2.06 mm), 'Ensporta' (1.84 mm versus 2.17 mm), 'NK-200' (1.84 mm versus 2.28 mm), 'S-101' (1.84 mm versus 2.16 mm), 'Sprinter' (1.84 mm versus 2.15 mm), 'Venlona' (1.84 mm versus 2.26 mm), 'S-321' (1.84 mm versus 2.20 mm) or 'Linn' (1.84 mm versus 2.40 mm).

'Dasher' has shown good winterhardiness in a New Jersey test (table 13) showing significantly less winter injury than a number of other varieties. 'Dasher' showed no winter injury whereas 'Citation' showed 11 percent, 'Birdie' showed 12 percent, 'Derby' showed 14 percent, 'Pennfine' showed 18 percent, 'Ensporta' showed 24 percent, 'Venlona' showed 28 percent, 'NK-100' showed 31 percent, 'Linn' showed 38 percent, 'Caravelle' showed 45 percent, 'S-101' showed 48 percent, and 'S-321' showed 63 percent.

'Dasher' has demonstrated moderately good resistance to the Rhizoctonia brown patch disease in turf trials in New Jersey (tables 14, 15 and 16). In a test established August 1974 at North Brunswick, New Jersey, 'Dasher' had a Rhizoctonia brown patch disease severity rating of 5.8 whereas 'Manhattan' rated 5.0, 'Yorktown' rated 4.9, 'Sprinter' rated 3.2, 'NK-200' rated 3.2, 'Linn' rated 2.7, 'S-321' rated 3.0, 'Ensporta' rated 2.2, 'Pelo' rated 2.5, 'Eton' rated 2.9, 'Servo' rated 2.9, 'Sportiva' rated 2.4, 'Caprice' rated 2.3, 'Game' rated 2.2, 'Endura' rated 2.1, 'Compas' rated 2.0, 'Splendor' rated 2.0, 'Combi' rated 1.8 and 'Perma' rated 1.7.

'Dasher' has been moderately susceptible to the winter brown blight disease incited by Helminthosporium spp. in New Jersey turf trials (table 17). 'Dasher' rated 5.8 whereas, the following varieties showed greater disease with 'Eton' rating 4.7, 'Derby' rating 4.6, 'Linn' rating 4.3, 'Birdie' rating 4.2, 'Pennfine' rating 4.0, 'Citation' rating 3.6, and 'Ensporta' rating 3.0. Some varieties were more resistant with 'Manhattan' rating 7.6, 'Yorktown II' rating 7.4, 'Blazer' rating 7.3, 'Yorktown' rating 7.2, 'Pelo' rating 7.0, 'Diplomat' rating 6.8, 'Omega' rating 6.7, and 'Fiesta' rating 6.0.

'Dasher' exhibited susceptibility to stem rust in Western Oregon (table 9).

'Dasher' most closely resembles 'Pennfine'. 'Dasher' has a similar color to 'Pennfine', however, close comparisons show that the varieties differ in a number of characteristics as follows:

1) 'Dasher' has exhibited generally better overall performance in New Jersey turf trials (table 1, 2 and 3). In a test seeded August 1977 at Adelphia, New Jersey, 'Dasher' showed an average turf performance score of 6.8 versus an average turf performance score of 5.8 for 'Pennfine'. In a test seeded August 1976 at North Brunswick, New Jersey, 'Dasher' had an average turf performance score of 5.9 whereas 'Pennfine' had an average turf performance score of 5.1. 'Dasher' had an average turf performance score of 6.1 compared in a test seeded in August 1974 at North Brunswick, New Jersey, whereas 'Pennfine' had an average performance score of 5.1.

2) Replicated tests in New Jersey and Oregon (tables 4, 5, 6, 11, 13 and 17) showed 'Dasher' to be 8 days later than 'Pennfine' in date^e of anthesis, 3.9 cm shorter, to have 70 percent more yellow anthers, to have 112 more tillers per 100 sq. cm., to show 18 percent less winter injury, and to be less susceptible to the winter brown blight disease (rating 5.8 versus 4.0) than 'Pennfine'.

Dates of initial anthesis presented in table 4 were obtained from a randomized replicated seed yield test. Each of the two replications consisted of seeded four row plots. Data were obtained from sections of the middle two rows. The data on mature plant height presented in table 5 represent the means of 120 measurements consisting of 60 measurements from each of two replications.

The tiller counts presented in table 11 were obtained from six replications. Two sets (three replications each of the Northeast Regional Ryegrass Test) were sampled to obtain this data. Plugs 10 cm in diameter were taken from each plot of the six replications. Tillers were physically separated, counted and measured.

In table 5, Dasher is shown as having a mature plant height of 81.1 cm with the standard error of the mean being 0.56 cm. The 0.95 fiducial interval would be 80.0 to 82.1. Pennfine is shown as having a mature plant height of 85.0 cm with the standard error of the mean being 0.81 cm. The 0.95 fiducial interval would be 83.4 to 86.6. The fiducial intervals for Dasher and Pennfine do not overlap.

Winter injury was rated only one season. We seldom see significant winter injury on the adapted, turf-type ryegrasses in our New Jersey turf trials. The data presented in table 13 is the only useful data that we have been able to obtain on this characteristic.

Table 1. Performance of perennial ryegrass cultivars and selections at Adelphia, New Jersey in test seeded August 30, 1977.

Cultivar or selection	Turf performance score 9 = best																Avg.
	Dec. 2	Mar. 22	Apr. 10	May 8	May 25	June 13	July 14	Aug. 2	Aug. 17	Aug. 25	Aug. 29	Sept. 11	Oct. 6	Nov. 4	Dec. 2		
	1977	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978		
1. Blazer	7.7	5.5	7.8	8.0	7.9	7.5	8.0	7.7	6.7	6.8	7.2	7.8	8.3	7.8	7.7	7.6	
2. Yorktown II	7.3	5.6	7.0	8.0	7.0	6.8	7.7	7.7	7.0	6.8	6.5	7.0	7.3	7.7	7.7	7.1	
3. Belle	7.3	5.2	7.3	7.7	6.7	6.3	7.7	7.0	6.3	7.0	7.0	7.0	7.3	7.3	7.3	7.0	
4. Fiesta	7.2	5.3	7.2	7.0	6.2	6.3	6.8	7.3	6.5	6.8	6.8	7.5	7.7	7.5	7.3	6.9	
5. Diplomat	6.8	5.7	7.2	7.5	6.9	6.3	6.7	6.8	6.3	6.7	6.3	6.7	7.2	7.0	7.5	6.8	
6. Dasher	7.0	5.1	6.8	7.0	5.7	6.3	7.5	7.3	6.5	6.7	6.8	7.2	7.5	7.5	7.5	6.8	
7. Citation	5.0	4.3	5.2	6.7	5.5	6.3	7.2	7.2	6.8	6.8	6.7	7.8	7.2	6.7	6.8	6.4	
8. Omega	7.2	5.3	7.2	7.2	6.7	6.0	6.7	6.0	5.5	5.8	5.7	6.2	6.3	6.7	7.2	6.4	
9. Regal	6.2	5.3	6.2	6.0	5.0	6.7	7.0	6.7	6.2	6.3	6.3	6.2	6.5	5.8	6.0	6.2	
10. Loretta	5.7	5.2	5.8	7.7	7.9	7.7	6.7	5.3	4.7	4.5	4.5	6.2	6.5	6.8	6.7	6.1	
11. Derby	5.7	4.5	5.2	6.0	5.7	6.5	7.2	6.5	5.7	6.3	6.2	6.2	5.8	6.7	6.2	6.0	
12. Birdie	5.7	4.9	5.2	6.3	5.9	5.8	6.5	5.8	5.7	5.8	6.0	5.8	5.3	6.7	6.5	5.9	
13. Pennfine	5.3	3.9	4.8	6.2	5.3	6.3	7.0	6.0	5.8	5.7	5.8	5.7	5.8	6.2	6.7	5.8	
14. Manhattan	6.7	5.6	5.3	6.8	7.0	5.8	5.7	4.7	4.5	4.5	4.5	4.7	5.8	6.0	6.7	5.6	
15. Hunter	5.8	5.3	5.7	7.0	7.7	6.0	4.7	3.5	3.5	2.7	2.8	3.3	4.2	5.0	5.0	4.8	
16. Caravelle	7.0	3.4	2.8	6.0	7.2	5.2	3.5	3.0	2.7	2.8	2.8	3.2	5.8	5.2	5.0	4.4	
17. Score	5.0	3.9	5.3	5.8	6.9	5.5	4.3	3.5	3.3	2.8	2.8	3.2	4.0	4.7	4.7	4.4	
18. Sprinter	5.0	3.8	4.5	5.7	6.5	4.7	3.5	2.7	2.8	2.2	2.3	2.7	3.0	4.0	4.0	3.8	
19. NK-100	4.2	3.7	3.7	3.7	3.7	4.3	3.7	2.8	3.2	3.2	3.3	3.0	3.2	3.7	3.2	3.5	
20. NK-200	5.5	4.5	4.3	5.0	4.7	4.2	3.5	2.3	2.3	2.2	1.8	2.0	2.3	3.5	3.7	3.5	
21. Enspporta	4.3	2.5	3.7	4.0	6.2	5.0	3.5	2.2	2.3	1.2	1.3	2.0	3.0	4.0	3.7	3.3	
22. Venlona	4.8	4.8	3.5	3.8	4.0	4.5	3.0	2.0	2.2	1.7	1.5	2.2	2.3	3.0	3.0	3.1	
23. S-321	3.3	1.8	2.0	2.8	2.9	3.0	2.5	1.7	2.2	1.7	1.8	2.2	2.5	3.0	2.3	2.4	
24. S-101	3.0	1.3	1.0	2.0	3.8	1.7	2.0	1.3	1.8	1.3	1.5	1.2	2.3	2.5	2.5	2.0	
25. Limn	3.0	2.3	2.0	2.2	2.2	2.3	1.8	1.2	1.2	1.2	1.0	1.5	1.3	2.2	1.8	1.8	
LSD .05	0.6	0.7	1.0	0.5	0.7	0.7	0.7	0.7	0.6	0.8	0.7	0.7	0.8	0.7	0.8		

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Table 2. Performance of perennial ryegrass cultivars and selections in turf trials seeded August 1976 at North Brunswick, New Jersey.

Turf performance score 9 = best																			
Variety	Nov 5 '76	Apr 20 '77	Apr 25 '77	May 5 '77	Jun 10 '77	July 4 '77	July 7 '77	Aug 5 '77	Aug 11 '77	Aug 18 '77	Aug 22 '77	Nov 3 '77	Dec 2 '77	Dec 23 '77	Dec 31 '77	Avg.	July 1978	avg.	2 yr. avg.
Blazer	6.9	6.4	7.1	6.5	6.6	6.4	6.7	6.7	6.5	6.7	6.9	7.2	6.5	7.4	7.6	6.8	6.6	6.7	
Yorktown II	6.5	6.3	7.2	7.0	7.3	7.2	6.8	6.8	6.2	7.8	6.8	7.5	7.2	6.5	7.3	7.0	6.2	6.6	
Fiesta	5.9	6.4	6.5	6.0	6.1	6.1	6.0	6.1	6.1	6.5	6.6	7.5	6.9	6.1	6.6	6.4	6.8	6.6	
Belle	6.1	6.4	6.6	6.3	6.4	6.0	5.8	5.9	6.0	6.3	6.2	7.2	7.2	6.3	6.7	6.4	6.4	6.4	
Citation	5.0	6.2	6.6	5.8	6.2	6.5	6.7	6.4	6.5	6.7	6.3	5.6	4.5	4.1	4.2	5.8	6.3	6.1	
Diplomat	5.2	6.0	6.9	6.2	6.2	6.0	6.1	5.2	5.6	5.3	5.4	6.4	6.8	6.7	7.2	6.1	5.9	6.0	
Regal	5.7	5.7	6.0	5.2	5.7	5.3	5.7	5.1	5.2	5.2	5.1	7.2	5.7	5.0	5.7	5.6	5.9	5.8	
Derby	5.4	5.7	5.8	5.2	5.8	5.7	6.0	5.5	5.3	5.0	5.1	6.7	5.7	4.9	5.4	5.6	5.9	5.8	
Dasher	5.6	6.2	6.4	5.2	5.4	5.6	5.9	5.4	5.4	5.3	5.6	6.7	6.6	6.1	6.3	5.9	5.4	5.7	
Yorktown	6.5	6.0	6.5	6.2	5.9	5.1	5.5	4.0	3.9	4.0	4.1	6.6	6.9	6.2	6.9	5.6	5.7	5.7	
Omega	5.8	6.2	6.3	5.8	5.7	5.3	5.3	5.0	4.7	4.8	5.0	6.8	7.0	6.2	7.5	5.8	5.4	5.6	
Birdie	5.3	5.5	5.5	4.8	5.0	6.0	6.0	6.0	6.0	5.8	6.0	6.5	4.3	3.3	3.5	5.3	5.1	5.2	
Pennfine	5.2	5.4	5.6	4.8	5.7	5.6	5.7	5.2	5.1	5.3	5.2	5.9	4.6	3.6	4.2	5.1	4.9	5.0	
Manhattan	5.3	5.3	6.0	5.6	5.5	4.7	4.6	3.6	3.6	3.4	3.9	6.3	6.1	6.1	6.4	5.1	4.7	4.9	
Score	5.0	5.0	5.7	5.3	4.3	4.3	4.0	2.7	3.0	3.7	3.7	6.3	5.7	4.7	5.3	4.6	3.5	4.1	
S-321	3.8	3.5	4.3	3.3	3.5	3.0	2.5	2.0	2.0	2.3	2.0	4.0	3.0	2.5	2.8	3.0	1.8	2.4	
S-101	3.0	4.0	4.5	3.5	3.3	3.0	2.3	1.8	2.0	2.0	2.0	3.5	2.5	2.0	2.3	2.8	1.6	2.2	
LSD .05	0.7	0.8	0.8	0.9	0.7	0.9	0.6	0.7	0.9	0.7	0.8	0.7	0.8	0.6	0.7		0.6		

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Table 3. Performance of perennial ryegrass varieties at North Brunswick, New Jersey in test seeded August 1974.

Variety	Turf performance score 9 = best											1974 to 1977 Avg
	1974		Apr	Apr	Apr	Aug	Aug	Aug	Dec	Dec	1977	
	1975 Avg	1976 Avg	11 '77	25 '77	29 '77	5 '77	11 '77	24 '77	6 '77	23 '77	Avg	
Yorktown II	6.5	7.4	9.0	7.0	8.0	8.0	8.0	8.0	9.0	8.0	8.1	7.3
Blazer	6.6	6.9	7.0	7.3	7.1	5.3	5.5	6.5	7.4	7.1	6.7	6.7
Fiesta	6.6	6.6	6.8	7.0	6.8	5.2	5.4	6.4	6.4	6.2	6.3	6.5
Diplomat	6.2	6.4	6.9	7.0	7.2	5.2	5.6	6.0	6.4	6.9	6.4	6.3
Dasher	6.1	6.3	6.5	6.7	6.5	5.1	5.3	6.2	6.3	6.3	6.1	6.2
Omega	6.0	6.2	6.5	6.7	7.2	4.5	5.5	6.0	6.5	6.7	6.2	6.1
Citation	6.0	6.3	6.5	6.7	5.8	6.5	6.2	7.1	4.5	4.1	5.9	6.1
Yorktown	6.0	6.2	6.5	7.0	6.5	5.0	4.0	5.5	6.5	6.5	5.9	6.0
Derby	5.6	5.9	6.0	6.0	5.5	5.7	5.0	5.9	6.4	5.6	5.8	5.8
Birdie	5.6	5.7	6.4	5.8	5.2	5.6	5.7	6.3	4.6	4.3	5.5	5.6
Pennfine	5.4	5.3	6.0	5.2	5.0	5.4	5.4	5.9	4.1	4.0	5.1	5.3
Manhattan	4.8	5.1	5.8	6.0	5.8	4.1	4.2	4.7	5.4	5.8	5.2	5.0
NK-200	4.1	3.9	3.2	5.5	5.0	2.5	3.0	3.0	3.2	2.7	3.5	3.8
Eton	4.1	4.0	3.0	5.5	5.0	2.2	2.2	2.5	3.0	2.2	3.2	3.8
Sprinter	3.3	3.4	4.3	5.7	4.3	3.3	3.3	3.7	4.3	4.0	4.1	3.6
Servo	3.8	3.5	3.2	4.0	3.5	3.2	2.5	2.2	3.2	2.7	3.1	3.5
Pelo	3.0	3.2	3.7	4.5	4.5	2.5	2.2	2.0	2.7	3.0	3.1	3.1
Ensporta	2.8	3.1	4.0	4.5	3.5	2.7	2.0	2.7	3.2	3.0	3.2	3.0
S321	3.1	3.1	3.2	3.2	2.5	2.7	2.5	2.7	2.2	2.0	2.6	2.9
Caprice	2.8	2.7	3.5	3.0	3.2	2.5	2.5	2.0	2.0	2.2	2.6	2.7
Sportiva	2.9	2.7	3.0	3.7	3.0	2.2	2.0	2.2	2.0	2.0	2.5	2.7
NK100	2.7	2.6	3.5	3.2	3.5	2.7	2.2	2.0	2.2	2.0	2.7	2.7
Game	2.8	2.4	3.0	2.5	2.2	2.2	2.0	2.0	2.2	1.7	2.2	2.5
Splendor	2.8	2.4	3.0	3.0	2.2	2.0	2.0	2.0	2.0	1.7	2.2	2.5
Endura	2.6	2.5	3.5	3.2	2.5	2.5	2.2	2.0	2.0	2.0	2.5	2.5
Compas	2.7	2.5	2.5	2.5	2.0	2.0	2.0	2.0	1.7	2.0	2.1	2.4
Combi	2.3	2.1	2.5	2.5	2.0	2.0	2.0	2.0	1.7	1.7	2.1	2.2
Perma	2.1	1.9	3.0	3.5	3.0	2.0	3.0	2.0	2.5	2.0	2.6	2.2
Linn	2.6	2.2	2.5	1.5	1.2	2.0	2.0	2.0	2.0	1.5	1.8	2.2
LSD at 5%	0.9	0.7									0.9	1.0

Table 4. Maturity ratings of perennial ryegrass cultivars and selections near Hubbard, Oregon during 1978.

Cultivar or selection	Date of initial 10% anthesis
1. Regal	May 25
2. Citation	May 26
3. Pennfine	May 26
4. Derby	May 27
5. Birdie	May 28
6. Fiesta	June 2
7. Dasher	June 3
8. Belle	June 4
9. Omega	June 4
10. Caravelle	June 11
11. Blazer	June 15
12. Yorktown II	June 15
13. Manhattan	June 20
14. Loretta	June 22
LSD .05	2.5 days

Table 5. Mature plant height and spike length measurements of perennial ryegrass cultivars and selections grown near Hubbard, Oregon during 1978.

Cultivar or selection	Mature plant height		Spike length	
	cm	SE	cm	SE
1. Derby	87.7	0.81	23.3	0.46
2. Birdie	85.5	0.80	25.5	0.46
3. Pennfine	85.0	0.81	23.5	0.44
4. Fiesta	83.2	0.67	22.5	0.50
5. Dasher	81.1	0.56	23.3	0.49
6. Omega	80.1	0.52	22.0	0.32
7. Belle	79.2	0.57	22.1	0.40
8. Manhattan	78.4	0.76	24.6	0.34
9. Blazer	76.8	0.63	22.3	0.40
10. Loretta	76.2	0.84	20.7	0.44
11. Citation	75.2	0.76	22.9	0.41
12. Yorktown II	71.4	0.70	21.7	0.38
13. Regal	69.5	0.70	21.2	0.53
14. Caravelle	62.3	0.48	17.6	0.45

Table 6. Comparison of perennial ryegrass cultivars and selections for flag leaf length and flag leaf width in test grown near Hubbard, Oregon during 1978.

Cultivar or selection	Flag leaf length		Flag leaf width	
	cm	SE	mm	SE
1. Birdie	19.7	0.39	6.4	0.18
2. Pennfine	18.7	0.44	6.7	0.19
3. Derby	18.6	0.41	6.4	0.21
4. Omega	18.6	0.45	5.9	0.18
5. Fiesta	18.4	0.36	5.7	0.17
6. Manhattan	18.2	0.50	5.9	0.21
7. Blazer	18.0	0.36	5.9	0.17
8. Yorktown II	18.0	0.38	4.9	0.14
9. Dasher	17.8	0.35	5.9	0.18
10. Belle	17.7	0.35	6.0	0.16
11. Loretta	17.1	0.53	6.5	0.23
12. Regal	16.8	0.45	6.3	0.19
13. Caravelle	16.6	0.43	5.9	0.17
14. Citation	16.3	0.41	6.2	0.22

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Table 7. Seed yield of perennial ryegrass cultivars at Hubbard, Oregon in test harvest summer 1978.

Cultivar	Seed yield lb/A
1. Fiesta	1029
2. Citation	983
3. Derby	890
4. Regal	855
5. Caravelle	850
6. Omega	826
7. Birdie	817
8. Belle	701
9. Yorktown II	668
10. Loretta	623
11. Manhattan	584
12. Blazer	576
13. Dasher	573
14. Pennfine	556
LSD at 5%	348

Table 8. Comparison of perennial ryegrass cultivars and selections for number of florets per spikelet, glume length and weight per ten spikes in test grown near Hubbard, Oregon during 1978.

Cultivar or selection	Number of florets per spikelet		Glume length		Weight per 10 spikes
	No.	SE	mm	SE	mg
1. Regal	10.9	0.32	6.6	0.23	1860
2. Citation	10.5	0.25	6.7	0.19	3810
3. Fiesta	10.4	0.25	7.9	0.28	
4. Pennfine	10.4	0.27	7.7	0.17	2600
5. Belle	10.3	0.25	7.6	0.21	2800
6. Dasher	9.7	0.26	8.5	0.27	2160
7. Birdie	9.7	0.32	7.5	0.22	3976
8. Caravelle	9.5	0.27	7.5	0.26	1900
9. Blazer	9.5	0.21	7.2	0.22	1080
10. Derby	9.1	0.27	7.8	0.27	3620
11. Omega	8.9	0.16	8.0	0.26	1516
12. Manhattan	8.2	0.26	7.8	0.22	670
13. Loretta	7.5	0.26	7.2	0.21	1600
14. Yorktown II	7.4	0.25	6.3	0.18	1560

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Table 9. Stem rust (*Puccinia graminis*) ratings on perennial ryegrass cultivars and selections taken July 2, 1978 in seed yield trials near Hubbard, Oregon.

Cultivar or selection	Stem rust rating (9 = most resistant)
1. Loretta 2. Caravelle 3. Manhattan 4. Pennfine 5. Yorktown II	6.0 5.0 4.0 4.0 4.0
6. Birdie 7. Blazer 8. Citation 9. Omega 10. Belle	3.5 3.5 3.5 3.5 3.0
11. Dasher 12. Derby 13. Fiesta 14. Regal	3.0 2.0 2.0 2.0

Table 10. Comparison of perennial ryegrass cultivars and selections grown near Hubbard, Oregon for spike color and color of anthers.

Cultivar or selection	Spike color		Anther color		
	Green %	Purple %	Purple %	White %	Yellow %
1. Caravelle	97	3	1	2	97
2. Birdie	96	4	2	38	60
3. Citation	95	5	5	80	15
4. Derby	95	5	5	45	50
5. Fiesta	95	5	5	5	90
6. Pennfine	95	5	5	75	20
7. Regal	92	8	5	45	50
8. Blazer	90	10	9	9	82
9. Dasher	90	10	5	5	90
10. Omega	90	10	25	0	75
11. Manhattan	80	20	3	72	25
12. Loretta	72	28	10	80	10
13. Belle	70	30	10	0	90
14. Yorktown II	8	92	70	10	20

Table 11. Tiller densities and leaf width measurements of perennial ryegrass cultivars and selections grown at Adelphia, New Jersey.

	Tillers ^{1/} 100 cm ² 12/78	Leaf ^{2/} width (mm) 12/78
1. Yorktown II	693	1.76
2. Diplomat	583	1.85
3. Fiesta	576	1.92
4. Dasher	559	1.84
5. Blazer	558	1.79
6. Belle	531	1.87
7. Birdie	527	1.97
8. Loretta	526	1.75
9. Omega	517	1.86
10. Citation	517	1.93
11. Pennfine	447	1.92
12. Derby	446	2.01
13. Manhattan	437	1.95
14. Player	419	2.04
15. Regal	416	1.97
16. Caravelle	384	2.17
17. NK-100	380	2.06
18. Ensporta	351	2.17
19. NK-200	342	2.28
20. S-101	337	2.16
21. Sprinter	331	2.15
22. Venlona	308	2.26
23. S-321	306	2.20
24. Linn	279	2.40
LSD .05 ⁼	72	0.11

^{1/} Tiller counts based on the average of six replications

^{2/} a. Leaf width data based on the average of ten leaves from each of six applications.

b. Measurements were taken 2mm. from the collar of the second fully expanded leaf counting from the top of the tiller.

^{3/} Test established August 1977, mowed at 2 cm and maintained at moderately high fertility. Tiller counts and leaf measurements were made during December 1978.

Table 12. Seed characteristics of perennial ryegrass cultivars and selections.

Cultivar or selection	Seed weight mg. per 1000 seeds	Total width of 10 seeds	Total length of 10 seeds
		mm.	mm.
1. NK200	2,205	13.3	57.4
2. Linn	2,093	13.2	60.2
3. Pennfine	1,842	12.2	50.9
4. Dasher	1,798	12.1	53.5
5. Manhattan	1,796	11.5	50.6
6. Belle	1,510	12.3	52.4
7. Derby	1,502	11.6	51.4
8. Fiesta	1,306	13.0	55.7
9. Blazer	1,200	12.6	56.1
10. Loretta	1,109	10.3	42.0
LSD .05	42	0.8	3.6

Only one seed lot of each entry was examined.

Table 13. Percent winter injury of perennial ryegrass cultivars and selections in test seeded August 30, 1977 at Adelphia, New Jersey.

Cultivar or selection	Percent winter injury March 30, 1978
1. Blazer	0
2. Yorktown II	0
3. Belle	0
4. Fiesta	0
5. Diplomat	0
6. Dasher	0
7. Omega	0
8. Regal	0
9. Manhattan	0
10. Score	4
11. NK200	4
12. Loretta	5
13. Hunter	8
14. Sprinter	8
15. Citation	11
16. Birdie	12
17. Derby	14
18. Pennfine	18
19. Ensporta	24
20. Venlona	28
21. NK100	31
22. Linn	38
23. Caravelle	45
24. S-101	48
25. S-321	63
LSD at 5%	7.3

TABLE 14. Reaction of perennial ryegrass cultivars and selections to the *Rhizoctonia* brown patch disease in turf trials established August 1974 at North Brunswick, New Jersey.

Cultivar or Selection	<i>Rhizoctonia</i> * Brown patch disease rating
1. Citation	6.6
2. Yorktown II	6.4
3. Blazer	6.2
4. Fiesta	6.1
5. Diplomat	6.0
6. Birdie	6.0
7. Dasher	5.8
8. Omega	5.8
9. Pennfine	5.8
10. Derby	5.7
11. Manhattan	5.0
12. Yorktown	4.9
13. NK 200	3.2
14. Sprinter	3.2
15. S-321	3.0
16. Eton	2.9
17. Servo	2.9
18. Linn	2.7
19. Pelo	2.5
20. Sportiva	2.4
21. Caprice	2.3
22. NK 100	2.3
23. Ensporta	2.2
24. Game	2.2
25. Endura	2.1
26. Compas	2.0
27. Splendor	2.0
28. Combi	1.8
29. Perma	1.7
LSD .05	0.5

*Disease incited by *Rhizoctonia solani*. Ratings taken August 9, 1976.

Table 15. Reaction of perennial ryegrass cultivars and selections to the *Rhizoctonia* brown patch disease in turf trials established August 1976 at North Brunswick, New Jersey.

Cultivar of Selection	<i>Rhizoctonia</i> brown patch disease rating 9 = least disease
1. Blazer	6.6
2. Yorktown II	6.5
3. Fiesta	6.5
4. Citation	6.4
5. Belle	6.2
6. Dasher	5.8
7. Diplomat	5.7
8. Derby	5.5
9. Birdie	5.5
10. Omega	5.4
11. Regal	5.4
12. Pennfine	5.2
13. Manhattan	4.8
14. Yorktown	4.4
15. Idole	3.8
16. Score	3.4
17. S-321	1.9
18. S-101	1.8
LSD .05	0.6

*Disease incited by *Rhizoctonia solani*. Ratings taken August 22, 1977.

Table 16. Reaction of perennial ryegrass cultivars and selections to *Rhizoctonia* brown patch disease in test planted August 30, 1977 at Adelphia, New Jersey.

Cultivar or selection	Disease rating* 9 = least damage
1. Blazer	7.4
2. Yorktown II	7.0
3. Fiesta	7.0
4. Citation	7.0
5. Dasher	6.9
6. Belle	6.8
7. Diplomat	6.6
8. Regal	6.3
9. Derby	6.2
10. Omega	6.0
11. Birdie	5.9
12. Pennfine	5.8
13. Manhattan	5.0
14. Loretta	4.9
15. Score	3.1
16. NK100	3.1
17. Hunter	3.0
18. Caravelle	2.9
19. Sprinter	2.5
20. NK200	2.1
21. Linn	2.0
22. Venlona	1.9
23. S-321	1.9
24. Ensporta	1.8
25. S-101	1.7
LSD at 5%	0.6

* Ratings obtained August 25, 1978.

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Table 17. Reaction of perennial ryegrass cultivars and selections to the winter brown blight disease incited by Helminthosporium siccans in turf trials seeded August 1974 at North Brunswick, New Jersey.

Cultivar or selection	Brown blight* disease rating 9 = least disease
1. Manhattan	7.6
2. Yorktown II	7.4
3. Blazer	7.3
4. Yorktown	7.2
5. Pelo	7.0
6. Diplomat	6.8
7. Omega	6.7
8. Fiesta	6.0
9. Dasher	5.8
10. NK200	5.0
11. S-321	5.0
12. Game	5.0
13. NK100	5.0
14. Eton	4.7
15. Derby	4.6
16. Linn	4.3
17. Birdie	4.2
18. Pennfine	4.0
19. Citation	3.6
20. Ensporta	3.0
LSD .05	0.9

* Ratings obtained December 27, 1974.

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Table 18. Brown blight ratings of perennial ryegrass cultivars and selections in turf trials at Hubbard, Oregon.

Cultivar or selection	Brown blight* percent damage		Avg.
	Dec.	Feb.	
	16 1977	3 1978	
1. S-101	45.0	45.0	45.0
2. NK-200	40.0	48.3	44.2
3. Citation	36.6	34.2	35.4
4. Linn	25.0	28.3	26.7
5. Pennfine	22.7	29.2	25.0
6. Fiesta	25.0	23.3	24.2
7. Birdie	21.0	23.3	22.2
8. Loretta	17.5	25.0	21.3
9. Derby	19.3	20.0	19.7
10. Dasher	15.7	22.3	19.0
11. Manhattan	18.3	17.8	18.1
12. Regal	18.3	16.0	17.2
13. Belle	16.0	18.3	17.2
14. Pelo	13.0	18.3	15.7
15. Omega	14.5	16.5	15.5
16. Caravelle	13.0	15.7	14.4
17. Yorktown II	11.7	15.7	13.7
18. Blazer	10.0	13.3	11.7
LSD at 5%			5.4

*Brown blight incited by Helminthosporium siccans

Table 19 Turf performance of perennial ryegrass cultivars and selections in turf trials at Hubbard, Oregon.

Cultivar or selection	Turf performance score 9 = best				Avg.
	Sept. 19 1977	Nov. 7 1977	Dec. 16 1977	Feb. 3 1978	
1. Blazer	7.7	7.7	7.3	7.3	7.5
2. Belle	7.7	7.3	6.7	7.0	7.2
3. Omega	7.4	7.5	6.5	6.9	7.1
4. Yorktown II	7.3	6.7	7.0	7.0	7.0
5. Régál	7.0	7.0	6.0	6.3	6.6
6. Dasher	7.3	6.7	6.0	6.3	6.6
7. Birdie	8.0	6.7	6.0	5.7	6.6
8. Manhattan	7.2	6.5	6.0	6.2	6.5
9. Fiesta	7.7	6.7	5.7	6.0	6.5
10. Derby	7.0	6.3	6.0	6.3	6.4
11. Loretta	7.0	6.5	6.0	6.0	6.4
12. Pennfine	7.0	7.0	6.0	5.5	6.4
13. Citation	6.7	6.9	5.3	5.0	6.0
14. Caravelle	6.7	6.3	5.0	5.7	5.9
15. NK-200	6.0	6.0	5.0	4.0	5.3
16. Linn	7.3	4.0	4.0	4.3	4.9
17. S-101	7.7	4.0	3.3	3.3	4.6
18. Pelo	5.3	4.3	4.0	4.3	4.5
LSD at 5%					0.8

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Table 20 . Performance of different seed lots of Dasher perennial ryegrass in turf trials seeded September 13, 1977 at Adelphia, New Jersey.

Seed lot	Turf performance score 9 = best												Avg.
	Dec. 2 1977	Mar. 22 1978	Apr. 14 1978	May 12 1978	May 25 1978	June 13 1978	Aug. 29 1978	Sept. 11 1978	Oct. 6 1978	Oct. 30 1978	Nov. 4 1978	Nov. 17 1978	
Foundation	7.7	5.9	7.0	7.0	5.7	5.5	6.2	7.0	6.7	7.5	7.2	7.0	6.7
Breeder	7.7	6.0	7.0	7.0	5.7	5.7	7.0	7.3	7.0	7.3	7.3	7.0	6.8
LSD .05	ns*	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns

*Differences are not statistically significant at the 5 percent level.

Table 21. Performance of perennial ryegrass cultivars and selections at Adelphia, New Jersey in turf trials seeded September 1977. Trials received moderate maintenance and were mowed at 4 cm.

Entry	Turf performance score 9 = best											
	1977			1978								
	Dec.	Mar.	Apr.	May	May	June	Aug.	Sept.	Oct.	Oct.	Nov.	Nov.
	2	22	14	12	25	13	29	11	6	30	4	17
1. Blazer	7.8	5.8	6.8	8.0	7.9	5.7	6.5	7.3	7.3	7.9	7.8	7.3
2. Yorktown II	7.7	6.0	6.0	8.0	8.0	5.3	5.3	6.7	7.0	7.7	6.7	7.0
3. Fiesta	7.9	5.8	6.7	7.2	6.0	5.1	6.6	7.6	7.3	7.3	7.6	7.1
4. Diplomat	7.0	6.3	6.0	7.3	7.3	5.0	6.0	7.0	6.3	7.7	7.3	7.0
5. Dasher	7.7	5.9	6.8	7.0	5.7	5.6	6.4	7.1	6.8	7.4	7.2	7.0
6. Belle	8.0	5.3	7.0	7.3	5.7	5.0	5.7	7.0	7.7	7.3	7.3	7.0
7. Derby	7.2	5.9	6.5	6.7	5.7	5.5	6.2	7.2	6.7	7.2	7.2	6.5
8. Loretta	6.7	5.3	5.3	8.0	8.0	6.7	5.0	6.3	6.0	6.7	7.0	6.7
9. Omega	8.0	6.0	6.0	7.7	6.7	5.0	6.0	6.7	5.7	7.0	6.7	7.0
10. Citation	7.0	5.7	6.7	6.7	5.0	5.0	6.3	7.0	7.3	6.7	6.7	6.3
11. Manhattan	7.2	5.7	5.5	7.0	7.0	5.2	5.7	6.0	6.0	7.0	6.7	6.2
12. Pennfine	7.0	6.0	6.0	6.3	5.7	5.0	5.7	7.3	6.7	7.3	7.0	6.0
13. Regal	7.3	5.7	6.3	7.0	5.7	6.0	5.7	6.3	6.0	6.7	6.0	6.3
14. Birdie	7.0	5.7	6.3	6.7	5.7	4.3	5.3	6.7	6.0	7.0	7.0	6.0
15. Caravelle	7.0	5.3	4.7	7.7	8.0	5.7	4.0	4.0	5.3	6.0	6.0	5.8
16. Score	4.0	4.7	5.7	7.0	7.3	5.0	4.0	4.3	5.0	6.0	5.7	5.7
17. NK-200	6.7	5.7	6.3	6.0	7.0	5.7	4.3	4.0	4.0	5.3	5.3	5.4
18. Sprinter	5.3	5.0	5.3	7.0	7.3	5.0	4.3	3.7	4.7	5.3	5.0	5.4
19. NK-100	3.7	4.7	4.7	5.0	4.3	4.3	4.3	3.3	4.0	5.7	5.0	4.0
20. Venlona	5.0	5.0	5.0	4.5	4.0	4.5	3.0	2.5	4.0	4.0	4.0	3.0
21. Ensporta	4.0	3.3	3.7	5.7	6.7	4.7	2.3	1.7	3.0	4.0	3.7	3.7
22. Linn	3.0	3.3	2.3	2.3	2.0	3.0	2.0	2.3	2.3	2.3	2.3	2.0
LSD 0.5=	0.8	0.8	0.8	0.6	0.8	0.7	1.0	0.9	1.1	1.0	1.1	1.3

7900051

PICKSEED

Pickseed West, Inc.
Box 888, Tangent, Oregon 97389, U.S.A.
Phone (503) 926-8886 LD-926-8888
Telex 360888, Cable: PICKWEST

April 16, 1979

Bernard Leese
Commissioner
Plant Variety Protection Office
United States Department of Agriculture
Beltsville, Maryland 20705

Subject: Perennial Ryegrass Application #7900051, Dasher
Effective filing date February 28, 1979

Addendum to Exhibit B novelty statement on Dasher Perennial
Ryegrass:

Dasher Perennial Ryegrass has shown very good resistance to
crown rust insighed by Puccinia coronata in turf trials near
Hubbard, Oregon (table 22). In this trial Dasher exhibited
better resistance than Pennfine, Citation, Omega, Manhattan,
Derby, and Regal.

Kindest regards.

PICKSEED WEST, INC.

Mike Robinson
Mike Robinson
Marketing Manager

MR/lh

Affiliates:
Otto Pick & Sons Seeds Ltd.
Richmond Hill, Ontario
Winnipeg, Manitoba
St. Hyacinthe, Quebec
Blenheim, Ontario

Table 22. Reaction of perennial ryegrass cultivars and selections to crown rust in turf trials near Hubbard, Oregon.

Cultivar or selection	Percent crown rust October 3, 1978
1. Loretta	0.0
2. Yorktown II	0.7
3. Birdie	1.0
4. Blazer	1.3
5. Belle	3.7
6. Dasher	3.7
7. Fiesta	4.0
8. Pelo	4.0
9. S-101	5.0
10. Caravelle	10.0
11. Pennfine	13.0
12. Linn	14.0
13. Citation	15.8
14. Omega	16.0
15. Manhattan	16.4
16. Derby	23.3
17. Regal	28.3
18. NK-200	35.0
LSD at 5%	

*Crown rust incited by Puccinia coronata

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782
OBJECTIVE DESCRIPTION OF CULTIVARS
RYEGRASS
(*Lolium* spp.)

NAME OF APPLICANT(S)

PICKSEED WEST, INC.

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

BOX 888, TANGENT, OREGON 07389

VARIETY NAME OR TEMPORARY DESIGNATION

DASHER

FOR OFFICIAL USE ONLY

PVPO NUMBER

7900051

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in first box (e.g. 0 8 9 or 0 9) when number is either 99 or less or 9 or less. Descriptions of characters should represent those that are typical for the variety. Ranges may be given also. Measure data should be for SPACED PLANTS. Give additional description for all characteristics that cannot be adequately described in the form below. Append all pertinent comparative trial and evaluation data.

1. SPECIES:

2

1 = L. MULTIFLORUM (annual or Italian: includes Westerwoldicum) 2 = L. PERENNE (perennial) 3 = L. RIGIDUM (includes Wimmera)

4 = HYBRID (of species) _____

5 = OTHER (Specify) _____

2. PLOIDY:

1

1 = DIPLOID

2 = TETRAPLOID

3 = OTHER (Specify) _____

3. DURATION:

3

1 = ANNUAL OR BIENNIAL

2 = SHORT LIVED PERENNIAL (3-4 years)

3 = PERENNIAL (more than 4 years)

STANDARD CULTIVARS

1 = GULF

2 = WIMMERA 62

3 = LINN

4 = PELO

5 = NORLEA

6 = ABERYSTWYTH S-23

7 = MANHATTAN

8 = PENNFINE

4. MATURITY (50% HEADED) Use standards from above for comparison:

4

1 = VERY EARLY

3 = EARLY

5 = MEDIUM

7 = LATE

9 = VERY LATE

1 7

DAYS EARLIER THAN

7

STANDARD CULTIVAR

8

DAYS LATER THAN

8

STANDARD CULTIVAR

5. MATURE PLANT HEIGHT (Use standard cultivars from above):

8 1 1

CM. HIGH

3 9

CM. SHORTER THAN

8

STANDARD CULTIVAR

2 7

CM. TALLER THAN

7

STANDARD CULTIVAR

6. PERCENT WINTER DAMAGE (estimated as percent of the area appearing dead). Use standard cultivars from above for comparison:

0

PERCENT DAMAGE OF APPLICATION CULTIVAR

PERCENT DAMAGE OF

STANDARD CULTIVAR

7. TURF DENSITY Use standard cultivars from above:

5 5 9

TILLERS PER 100 SQ. CM.

LESS TILLERS PER 100 SQ. CM. THAN

STANDARD CULTIVAR

1 1 2

MORE TILLERS PER 100 SQ. CM. THAN

8

STANDARD CULTIVAR

8. FLAG LEAF (at full growth) Use standard cultivars from above:

1 7 8

CM. LENGTH (from ligule to tip)

5 9

MM. WIDTH (at widest point)

0 4

CM. SHORTER THAN

7

STANDARD CULTIVAR

CM. LONGER THAN

STANDARD CULTIVAR

0 8

MM. NARROWER THAN

8

STANDARD CULTIVAR

0 0

MM. WIDER THAN

7

STANDARD CULTIVAR

1 = DEFLEXED
3 = RECURVED
5 = HORIZONTAL
7 = SEMI-ERECT
9 = ERECTFLAG LEAF AT
BOOT STAGE:

STANDARD CULTIVARS

1 = GULF
5 = NORLEA2 = WIMMERA 62
6 = ABERYSTWYTH S-233 = LINN
7 = MANHATTAN4 = PELO
8 = PENNFINE

9. LEAVES:

1 = LEAVES ROLLED IN YOUNG SHOOTS

3 VERNATION: 2 = LEAVES SEMI-ROLLED (folded with rolled edges)

3 = LEAVES FOLDED IN YOUNG SHOOTS

1 0 0 % PLANTS WITH ANTHOCYANIN IN LOWER LEAF SHEATH

2 FOLIAGE COLOR:

1 = YELLOW GREEN
2 = MEDIUM GREEN
3 = BLUE GREEN

10. SPIKE:

2 3 3 MM. SPIKE LENGTH (tip to internode below lowest floret)

2 MM. SHORTER THAN 8

MM. LONGER THAN

USE STANDARD CULTIVARS FROM ABOVE

2 1 6 0 MG. PER TEN SPIKES (trimmed to internode below lowest floret)

4 4 0 MG. LIGHTER PER TEN SPIKES THAN 8

USE STANDARD CULTIVARS FROM ABOVE

1 4 9 0 MG. HEAVIER PER TEN SPIKES THAN 7

9.7 FLORETS PER SPIKELET

PERCENTAGE OF PLANTS WITH:

RACHIS: % SMOOTH

% ROUGH

SPIKE COLOR: 9 0 % GREEN

1 0 % PURPLE

LEMMA: 0 % AWNED

MM. AWN LENGTH

8.5 MM. GLUME LENGTH

1 = SPIKELET LENGTH NEARLY EQUAL TO OUTER GLUMES
2 = SPIKELET LENGTH MUCH LONGER THAN OUTER GLUMES

11. COLEOPTILE:

1 0 0 % PLANTS WITH ANTHOCYANIN IN COLEOPTILE

12. ANTHOR COLOR:

5 % PLANTS WITH WHITE ANTHERS

9 0 % PLANTS WITH YELLOW ANTHERS

5 % PLANTS WITH PURPLE ANTHERS

13. ROOT AND PLANT CHARACTERS:

1 0 0 % PLANTS WITH PROSTRATE GROWTH HABIT

0 % PLANTS WITH FLUORESCENT ROOTS

0 % PLANTS WITH UPRIGHT GROWTH HABIT

14. SEED:

1 7 9 8 MG. PER 1,000 SEED

5 3 5 MM. TOTAL LENGTH OF 10 SEEDS

1 2 2 MM. TOTAL WIDTH OF TEN SEEDS

rec'd
2/28/79

3:30 pm

32

15. DISEASE (0 = NOT TESTED, 2 = HIGHLY SUSCEPTIBLE, 4 = MODERATELY SUSCEPTIBLE, 6 = MODERATELY RESISTANT, 8 = HIGHLY RESISTANT):

<input type="text" value="4"/>	CROWN RUST (<i>Puccinia coronata</i>)	<input type="text" value="0"/>	DOLLAR SPOT (<i>Sclerotinia</i>)	<input type="text" value="6"/>	BROWN PATCH (<i>Rhizoctonia</i>)
<input type="text" value="4"/>	LEAF SPOT (<i>Helminthosporium</i>)	<input type="text" value="8"/>	MILDEW	<input type="text" value="0"/>	OTHER (<i>Specify</i>)
<input type="text" value="0"/>	SNOW MOLD (<i>Typhula</i>)	<input type="text" value="0"/>	RED THREAD (<i>Corticium</i>)		

16. INSECT (0 = NOT TESTED, 2 = HIGHLY SUSCEPTIBLE, 4 = MODERATELY SUSCEPTIBLE, 6 = MODERATELY RESISTANT, 8 = HIGHLY RESISTANT):

(*Specify*) _____

17. GIVE RESEMBLANCE VALUE IN LEFT COLUMN AND VARIETY CODE NUMBER IN RIGHT COLUMN FOR VARIETY WITH WHICH COMPARISON IS MADE (1 = LESS THAN, 2 = SAME AS, 3 = MORE ERECT, MORE RESISTANT, DENSER, MORE PERSISTENT, DARKER OR GREATER HEIGHT.):

RESEMBLANCE	CHARACTER	SIMILAR VARIETY
<input type="text" value="1"/>	PLANT HABIT (erectness)	<input type="text" value="8"/> 1 = GULF
<input type="text" value="3"/>	TILLERING	<input type="text" value="8"/> 2 = WIMMERA 62
<input type="text" value="3"/>	WINTER HARDINESS	<input type="text" value="8"/> 3 = LINN
<input type="text" value="3"/>	HIGH TEMP. STRESS RESISTANCE	<input type="text" value="7"/> 4 = PELO
<input type="text" value="2"/>	TURF PERSISTENCE	<input type="text" value="8"/> 5 = NORLEA
<input type="text" value="2"/>	PLANT COLOR	<input type="text" value="8"/> 6 = ABERYSTWYTH S-23
<input type="text" value="2"/>	VERTICAL SEEDLING GROWTH RATE	<input type="text" value="7"/> 7 = MANHATTAN
<input type="text" value="3"/>	CROWN DENSITY	<input type="text" value="8"/> 8 = PENNFINE
<input type="text" value="2"/>	MOWER SHREDDING RESISTANCE	<input type="text" value="8"/>

18. GIVE AREA OF ADAPTATION AND INTENDED USE: New Jersey and surrounding areas

19. GIVE AREA TEST RESULTS PRESENTED FROM: New Jersey, Oregon

COMMENTS:

EXECUTED February 1, 1979
STATE OF NEW JERSEY

Cyril R. Funk, Jr.
CYRIL R. FUNK, JR.

COUNTY OF MIDDLESEX

Before me a Notary Public for said County, personally appeared C.R. Funk, Jr. known to me to be the person who executed and acknowledged it to be his free act and deed.

WITNESS my hand and seal February 1, 1979
Aida Bianchi
Notary Public

Commission expires March 29, 1982

EXECUTED Feb 19 '79
STATE OF OREGON

W. Kent Wiley
W. KENT WILEY

COUNTY Lin

Before me a Notary Public for said County, personally appeared W. Kent Wiley known to me to be the person who executed and acknowledged it to be his free act and deed.

WITNESS my hand and seal [Signature]
Feb 19 '79
Notary Public for Oregon

Commission expires 1-25-82

ASSIGNMENT OF DASHER PERENNIAL RYEGRASS

WHEREAS, William K. Dickson, 20 Kate Terrace, Piscataway, New Jersey, Ralph E. Engel, 407 West Lawrence Street, North Brunswick, New Jersey, Cyril R. Funk, Jr., 4 Delaware Drive, East Brunswick, New Jersey, and W. Kent Wiley, Box 888, Tangent, Oregon, have cooperated in the breeding and development of 'Dasher' perennial ryegrass (Pickseed R-33).

NOW, THEREFORE, in consideration of one (\$1.00) DOLLAR and other valuable considerations made to each of us by Pickseed West, Inc., including those designated in our Agreement of October 23, 1975, we hereby assign unto the said Pickseed West, Inc., our entire interest in Dasher perennial ryegrass for the United States and all foreign countries and any plant variety protection to be issued, therefore, in the United States or any foreign country. The Commissioner, Plant Variety Protection Office is requested to issue the plant variety protection certificate in accordance herewith.

EXECUTED February 1, 1979
STATE OF NEW JERSEY

William K. Dickson
WILLIAM K. DICKSON

COUNTY OF MIDDLESEX

Before me a Notary Public for said County, personally appeared W.K. Dickson known to me to be the person who executed and acknowledged it to be his free act and deed.

WITNESS my hand and seal February 1, 1979
Aida Bianchi
Notary Public
Commission expires March 29, 1982

EXECUTED February 1, 1979
STATE OF NEW JERSEY

Ralph E. Engel
RALPH E. ENGEL

COUNTY OF MISSLESEX

Before me a Notary Public for said County, personally appeared R.E. Engel known to me to be the person who executed and acknowledged it to be his free act and deed.

WITNESS my hand and seal February 1, 1979
Aida Bianchi
Notary Public
Commission expires March 29, 1982